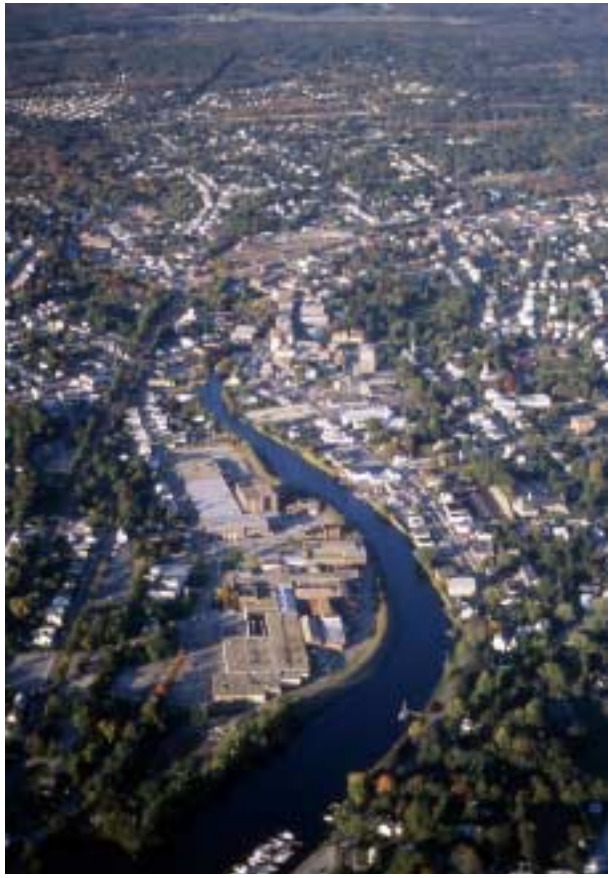
II. Greenspace Planning Process and Methods

Background

South County is blessed with a remarkably diverse landscape, a landscape shaped by both natural and cultural forces over thousands of years. Its basic form is rooted in the geology of the region, shaped by the glaciers of the last ice age, and molded since by the action of wind, water, and communities of plants and animals. From the wooded hills in the northwest, rivers and streams drain a series of narrow valleys, and flow through a rich belt of farmland that crosses the county's waist. Backing up behind a chain of stony hills that mark the recession of the glaciers, these streams form a string of ponds and swamps, merging eventually into the Pawcatuck River and flowing to the sea at Westerly. Along the east coast, coves and inlets alternate with the land at the edge of Narragansett Bay; to the south, the barrier beaches and salt ponds support a wealth of plants and animals.



South County is remarkable for its rich diversity of landscapes. Unlike many other areas along the eastern seaboard, it still has large areas of wilderness, such as the Great Swamp (left) and lively town and village centers, such as Westerly (right). In between these extremes lies a rich working landscape of farms and forests.

Overlaid with this natural landscape is a cultural landscape of farms, forests, mill villages and town centers that evolved in an intimate relationship with the land in three centuries since European settlement and previous millennia of use by Native Americans. Traditional land uses and settlement patterns were based on local resources of farmland, timber, and water power. Village centers grew in areas with protected harbors, at cross roads, and at the natural center of agricultural or mill districts. The natural systems that underlie these human settlement patterns were not erased, but rather incorporated into a larger composition that is both functionally stable and beautiful to look at. What was passed down to current residents of South County is thus a rich landscape heritage, one that offers a balance of clean water, a healthy environment, scenic resources, and plentiful outdoor recreation -- all of which adds up to a high quality of life.

Although still largely unspoiled, South County is threatened by the sprawling suburban development that has overtaken areas closer to major cities. This is particularly noticeable because this new development, no matter where it is located, tends to follow the same monotonous patterns, reducing everything to a simple formula repeated over and over. Residential development, for which most of the county is zoned, is for the most part restricted to one

or two-acre lots spread out along broad cul-de-sacs. Commercial development extends along the state highways outside of older town centers, driven primarily by the larger national chains stores with their "big-box" buildings and sprawling parking lots. Old commercial strips are abandoned as new strips form farther out. Meanwhile, Main Streets struggle to attract tenants, and donut shops and self-storage structures replace historic buildings.

For years, state conservation agencies, town governments, and other public and private groups have been working to preserve the South County landscape and to ensure public access to open space. Yet the results of these efforts are sometimes diluted because they are not coordinated by an overall protection strategy, and often proceed on an ad hoc basis as opportunities arise. State agencies and non-profit groups commonly pursue relatively narrow aims, usually focused on preservation of sensitive environmental resources. Meanwhile, local efforts, including changes to zoning ordinances that shape growth patterns, are developed largely through plans that end at town borders. The result has been that large amounts of land have been preserved in South County, but the overall pattern is a patchwork of different pieces, rather than a unified network of protected open space.

The South County Greenspace Project grew out of a realization that surely much more can be accomplished if there is some coordination between agencies, and between what is being done regionally and efforts at the local level. The difficult part was to develop a planning strategy that would be detailed enough to be meaningful for local planning, but simple enough to generate clear regional priorities upon which a county-wide strategy could be based. The answer was a process that began at the local level, using a common methodology to bring each community to the same level of information and understanding. With each town on a common footing, communities, both large and small, were able to confidently evaluate regional priorities and potential action strategies.

The incredible diversity of South County's open space resources cannot be experienced within a single town. Only by working together can the separate towns protect the full spectrum of landscapes and recreational opportunities that creates the sense of place and quality of life that attracts people to this unique region.

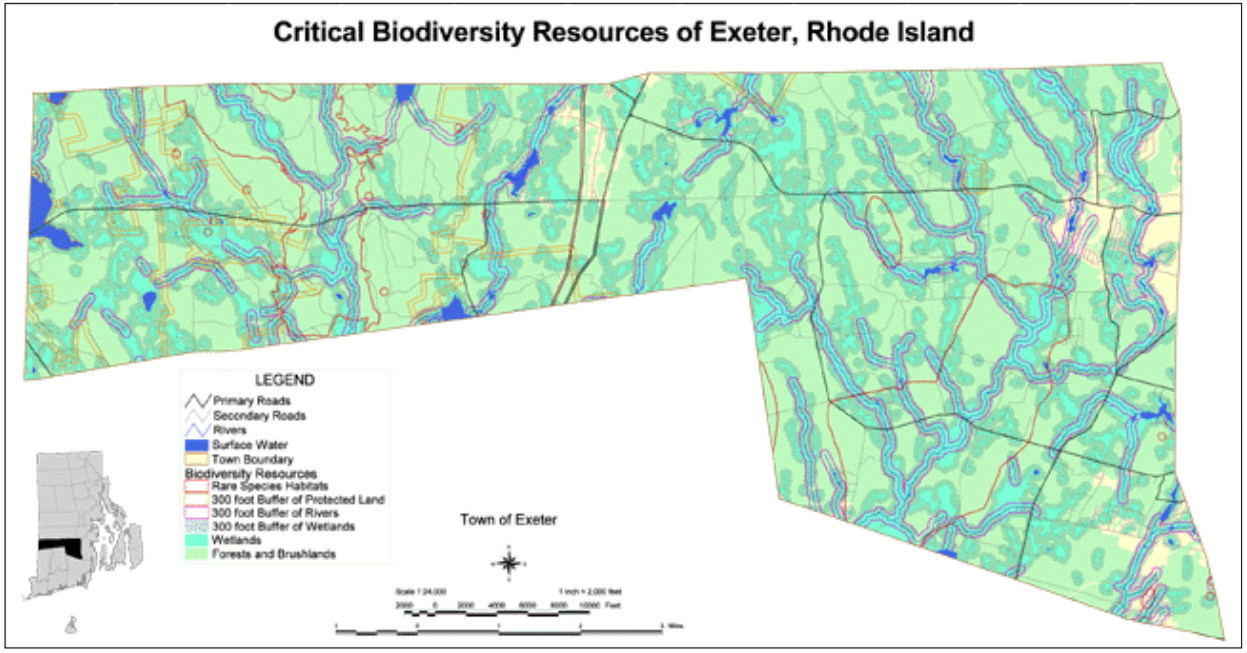
A Bottom-Up Planning Process

The greenspace planning process was designed to work from the bottom up. Each town went through an individual process of inventory and analysis, resulting in preliminary maps of Greenspace priorities in each community. These local plans were then compiled into a series of regional inventory and priority plans for review at several regional meetings. The results are designed to provide a detailed, but flexible base of information that can be used by local commissions as well as state agencies to achieve shared goals for landscape protection.

During the regional workshops, it became apparent that agreement on a single set of priorities would be difficult, if not impossible: the final maps are therefore designed to be used and overlaid in different ways depending on the focus of an individual group, town, non-profit, or state agency.

The method used for the Greenspace Planning Process followed a traditional landscape planning model: data about different types of resources were compiled; inventory maps were prepared showing the location and patterns of these resources; then these inventory maps were overlaid with each other to identify those areas and connecting corridors with multiple resource values. The process began with a series of maps prepared by the Environmental Data Center at the University of Rhode Island. This "Critical Lands" analysis produced a series of maps for each town at a scale of 1" = 2000': base maps with 1995 orthophotography and standard USGS mapping; critical farmland resources, which overlaid cleared agricultural land with prime agricultural soils; critical groundwater resources, showing aquifers, recharge areas and wellhead protection areas; critical cultural, recreational, and aesthetic resources; and critical biodiversity resources, including forest, wetlands, and rare species habitats, along with 300' buffer of rivers, wetlands, and protected lands. The areas covered by these different resources were overlaid and compared, which allowed for the calculation of their co-occurrence. A final *Composite Map of Critical Resources* was created for each town showing where the overlap of critical resource areas occurred. Three levels of value, representing the degree of overlap, were described: valuable, critical, and very critical.

These maps were invaluable in sharing with local committees the information that is available on the Rhode Island Geographic Information System, a central depository of maps and data that is maintained at the University of Rhode Island. Based on a review of this information, a greenspace planning methodology was created that regrouped existing data into three themes – natural, cultural, and recreational resources – and combined mapping and analysis in the office with public review and refinement at the local level.



The Critical Resource maps prepared by URI's Environmental Data Center at the beginning of the process demonstrated the wealth of information available on the Rhode Island Geographic Information System.

Public Participation Process

While the actual process varied somewhat from town to town, public participation revolved around a series of four meetings in each community. **The first meeting** was held as a joint session of the local Planning Board and Town Council. The consultant team introduced the project, presented the critical lands inventory maps, and posted wall-size base maps for review. Attendees were asked to volunteer to serve on a Greenspace Planning Committee, and those that did so were divided into three sub-groups to focus on the three key resource themes. Each of these subgroups then met with a member of the consultant team to review the base maps and existing information, to discuss what additional information would be needed to move forward, and to strategize about how to get it and put it on the maps.

Both local volunteers and members of the consultant team came back to the **second meeting** with additional information, sketch plans, and reports providing information about each of the three resource themes. Each group was asked to present the information they collected, and the consultants led discussion about what conclusions could be drawn and what additional information was needed. Throughout the process the emphasis was on understanding the systems that underlie the occurrence of a particular resource. For example, we want to know not only that a rare orchid has been found in a particular place, but also why it is there. What is the ecosystem that supports that species, and how big is the surrounding landscape upon which it depends? Likewise, if certain structures have been identified as historically significant we want to know not only where they are, but also how do they fit into the larger landscape history of the town? What stories do they tell about the history of the community?

The consultant team returned to the **third meeting** with revised maps of natural, cultural and recreational resources for review by the town greenspace committees. Attendees were led in a discussion of important sites and potential linkages for each of the resource themes. Preliminary overlays were presented that began to explore how the three principal resource themes overlap, and various systems for prioritizing open space values were discussed.

An extensive series of meetings in each community allowed residents to contribute to the process, and brought together diverse local interests in conservation, historic preservation, and recreation.

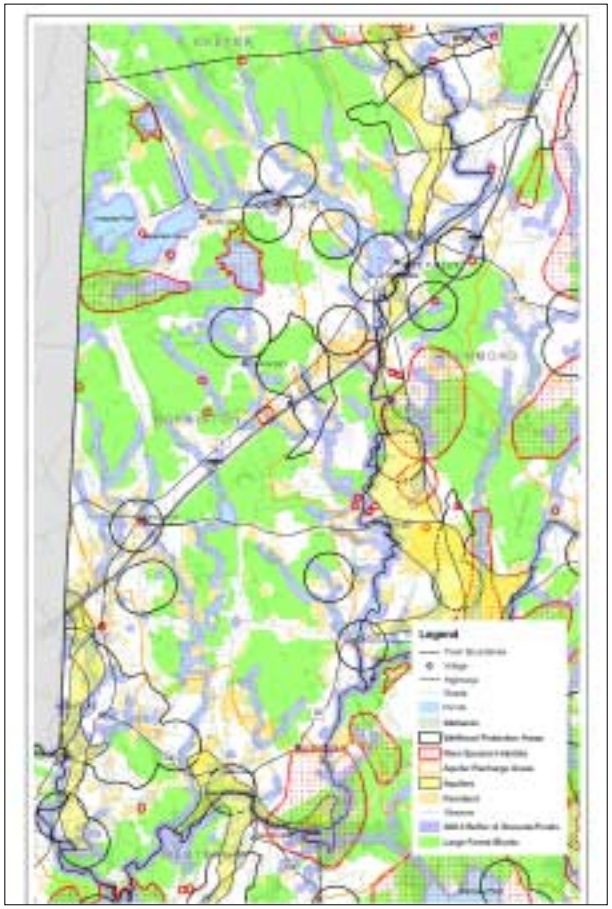
At the **fourth meeting**, the consultant team presented a final draft of each town's resource inventory and priority maps for review and discussion. These were compared with maps of lands already protected to examine potential gaps in important resource corridors and opportunities to incorporate larger resource systems into lands already preserved. Maps showing various ways of prioritizing open space were presented for review, and while no single conclusion was reached we concluded by presenting the landscape preservation approach to using the information. While each town will have to sort out its own priorities, the idea is that those areas that include a balance of natural, cultural, and recreational resources are key to the visual character and quality of life in South County, and represent the common ground where the interests of many diverse groups come together.

As the local process was concluding, the local greenspace volunteers, together with other town officials and interested citizens, were invited to convene at several **regional workshops**. At the first workshop, maps were presented that compiled all the local data into a single inventory for each resource type. Participants broke into small groups to discuss the map results and approaches to setting regional priorities for greenspace protection. For the second workshop, revised maps were presented for review, along with several alternatives for setting priorities for action. Extensive discussion helped determine the final set of inventory and resource priority maps that are found in this report.

As the regional greenspace process proceeded, attention turned to how towns and regional groups could best **implement the greenspace strategy**. As part of this process, Randall Arendt, a nationally known expert in the use of Conservation Design and other techniques that use the development process to create open space networks, prepared an audit of each town's Comprehensive Plan, Zoning Ordinance and Development Regulations. A detailed report was presented to each town at a meeting of the Planning Board. Meanwhile, a final set of local maps was presented to planners in each community, and made available on RIDEM's web site. As towns reviewed the maps and recommendations for local planning and zoning, the consultants worked with the steering committee and the Sustainable Watersheds Office to prepare a series of recommendations that are found in part IV of this report.

Methods of Mapping and Geographic Analysis

While the process of mapping and analysis generally followed a traditional planning model, the way information is recorded and presented in the final set of maps was designed to encourage an unusually broad approach to identifying open space resources. While there is no "right way" to do this, by explicitly developing separate maps for natural, cultural, and recreational resources, this approach requires development of a much more complete understanding of all three areas than is usually attained. At the same time, the limitations on volunteer time and project budget forced the project to make good use of existing data, with carefully targeted development of additional information. The final content of the maps represents the collective review of all the local committees, which were quite consistent in their reaction and recommendations. As described below, the three primary themes represent an objective perspective and a reasonable consensus about which resources are of most concern to towns as they try to protect the environmental health and quality of life in South County.

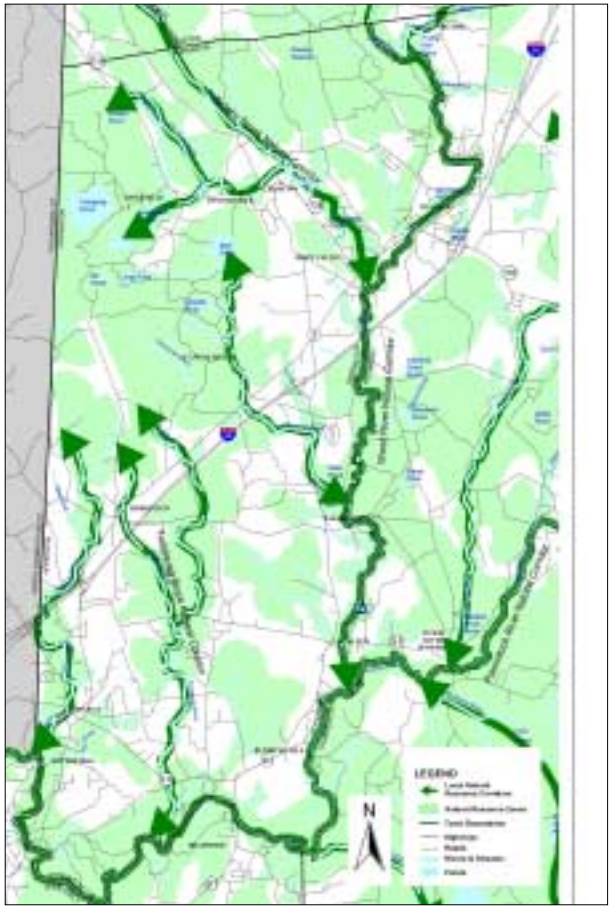


The natural resources inventory of Hopkinton included wetlands and waterbodies (blue), large forest blocks (green) aquifers (yellow) and natural heritage areas(red).

A map of core biological resources (dark green) helps to show the areas with the highest ecological value, and the river and stream corridors that connect them.

Natural Resources

Natural resources were mapped primarily using the most current data available from the Rhode Island Geographic Information System. The most critical natural resource for South County Communities is **water supply**, which was mapped using three types of areas: aquifers, aquifer recharge areas, and wellhead protection areas. **Surface waters systems** are critical to the ecology of the county. These included rivers, streams, ponds, and wetlands. A three hundred foot buffer around these surface waters was shown to indicate the area that is most critical to protect both wildlife habitat and water quality. Overlaid with these physical resources were **rare species habitat** areas identified by the Rhode Island Natural Heritage Program. These include documented occurrences of rare species as well as surrounding areas that are critical to their ongoing survival. Finally, in our discussions with scientists at the University of Rhode Island and the Nature Conservancy, it was determined that of all factors in measuring wildlife habitat, the presence of large tracts of undeveloped forest – especially when connected



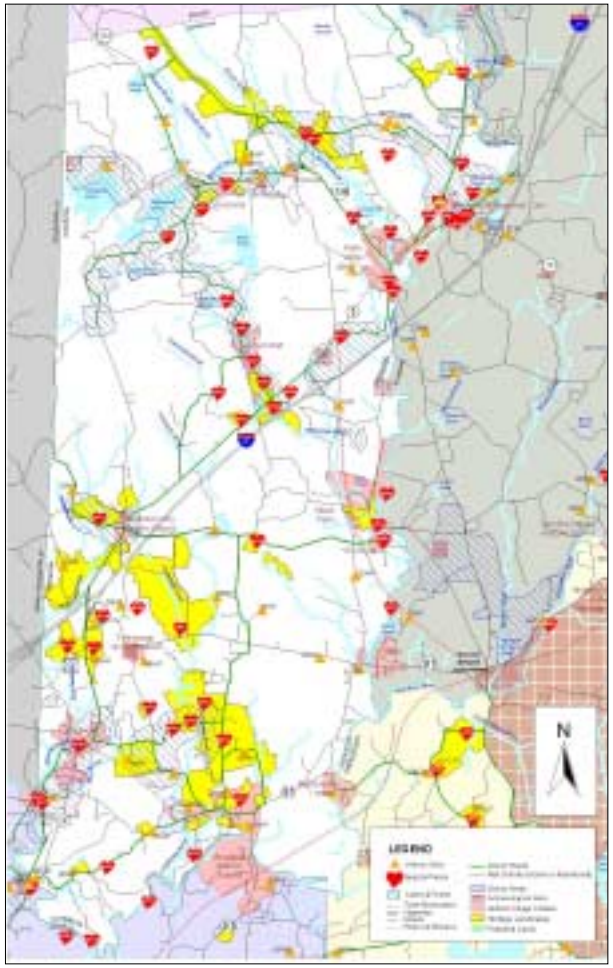
Combining areas with the highest ecological value with other resources highly valued by the town, such as aquifers and farmland, a simplified map of Hopkinton's natural resource priorities shows the most important areas (light green) and connecting corridors (dark green).

to river and stream corridors – provides the highest value for preservation of all species of wild plants and animals. Lacking an existing data layer for these areas, the consultant team used the 1997 aerial photographs from RIGIS to create a new digital map of **large forest blocks**.

Cultural Resources

While natural resources evolved and continue to grow without human influence, cultural resources generally include anything that people have made, or that people care about. These include historic sites, scenic areas, working agricultural landscapes, etc. This includes both the kind of things that can be objectively described, such as an historic farmstead that Washington slept in, as well as places that are important to the history of a particular culture or the ongoing life of a town. Like natural resources, the study of cultural resources can engender a long list of potential factors; in order to fit the analysis into the time that was available we identified three key groups of cultural resources: historic resources, scenic landscapes, and special places.

The inventory of historic resources began with **historic and archaeological sites** that have been identified at a statewide level and mapped as part of RIGIS. Because this is limited to those that have been listed, or are candidates to be listed on the National Register of Historic Places, many locally important historic sites were not identified. It was determined that the best source for additional information is a series of Historic and Architectural reports prepared by Rhode Island Historical Preservation Commission. Each of these reports contains an inventory and evaluation of many local sites, which were digitized as a new geographic data set.



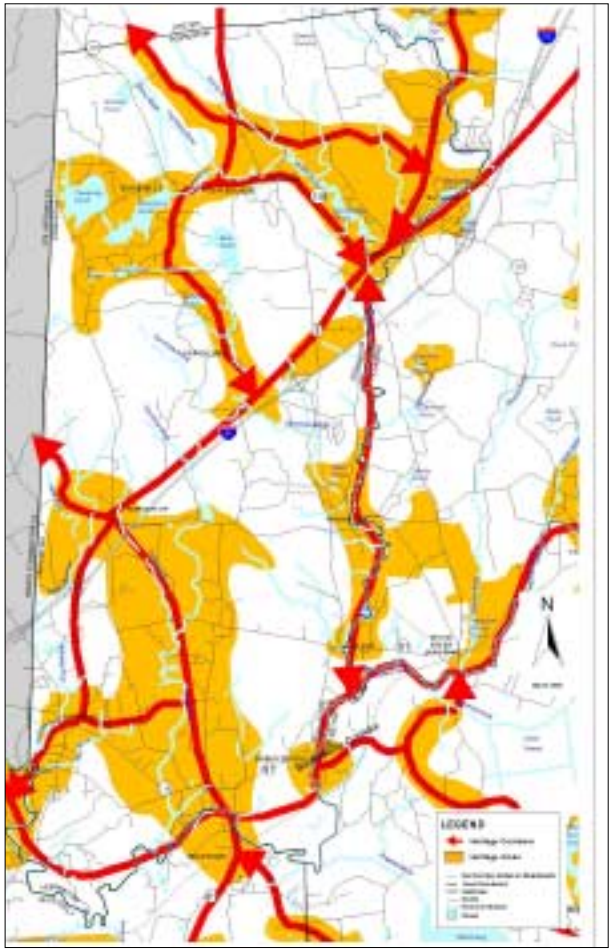
Hopkinton's inventory of cultural resources includes historic sites (orange triangles), heritage landscapes (yellow), scenic areas (blue hatch), and special places.

These sources, however, usually focus on a specific structure or group of buildings, without mapping the landscape context. By this we mean that area which was traditionally connected functionally to the structure or site, and which continues to be important to maintaining its visual character. Many old New England homesteads have been protected, for

example, while the fields and woodlots that surround them were developed, destroying the historic landscape resource itself, but as importantly diminishing the value of the structure at its center. For our purposes, then, the task was to identify those historic sites and surrounding landscapes that still exist, drawing a boundary on the maps to mark the minimum area that should be protected or managed to protect that cultural landscape. These areas, which include agricultural landscapes, mill sites, and historic village centers, are identified as **heritage landscapes**.

The evaluation of **scenic landscapes** likewise began using a statewide inventory known as the Rhode Island Landscape Inventory, and another statewide survey of scenic roads. Volunteers on the local committees enhanced this information using town reports and windshield surveys to identify areas with high scenic quality at the neighborhood scale, with an emphasis on those that are visible from public areas. Specific views or vista points were also identified.

The final category of cultural landscapes that were identified was "**special places**." These include all the places in town that people care about, those "places in the heart" that may not be valuable in and of themselves, but which are nevertheless critical to local character and quality of life. They may be scenic spots or historic sites, just as often they are local hangouts, places where people go to meet each other, or just to get away from it all. In some towns these were compiled from existing surveys or planning studies; in others volunteers posted maps in public places and asked people to mark down their special places.



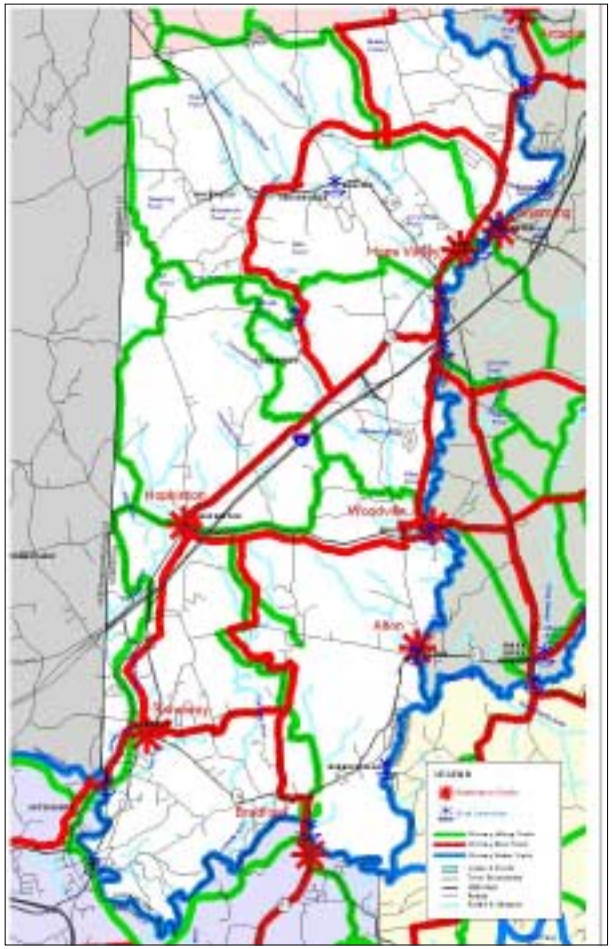
Just like the map of natural priorities, this map of cultural resource priorities is designed to show the overall pattern of historic sites and other cultural resources. The orange areas represent zones with an unusual combination of historic sites and surrounding heritage landscapes, scenic roads and vistas, as well as the special places valued by local citizens. The red arrows identify cultural corridors, such as the historic New London Turnpike and the Pawcatuck River, both of were fundamental to the creation of Hopkinton's village centers.

Recreational Resources

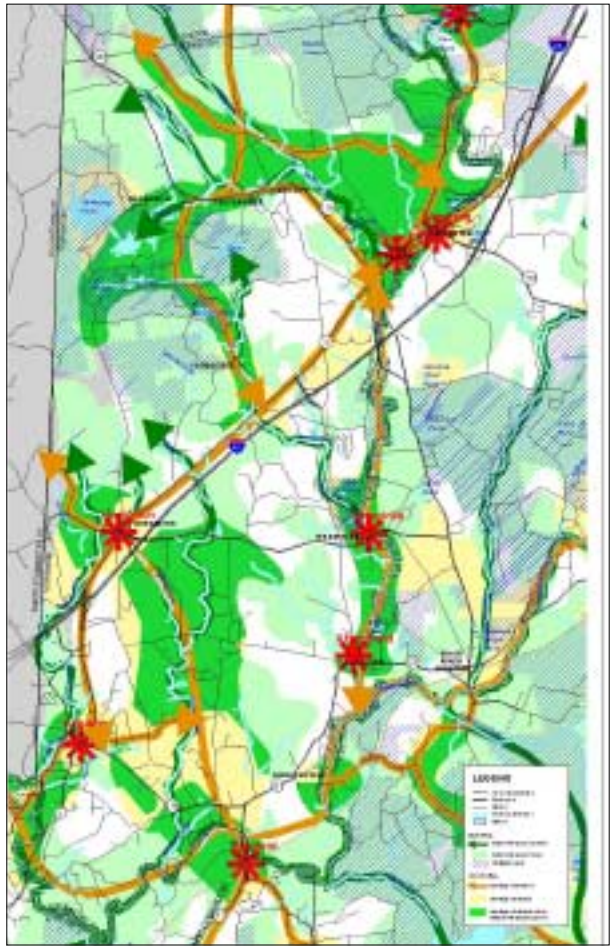
The focus of the recreational resource analysis was opportunities for active recreation, especially trails and other recreational routes. Three types of trails were identified in the inventories, which located both existing trails and potential future trails. Existing **hiking trails** were identified by local volunteers on USGS base maps, and compiled from trail maps published in trail guides. The Nature Conservancy supplied a digitized alignment for the North South Trail, which is the only existing regional trail. Potential future trails were identified based on aerial photographs and USGS maps, with a combination of local knowledge of informal trails and expert opinion about what might be possible using a combination of public roads, utility corridors, overgrown woods roads, etc.

Likewise, **bike trails** and routes were identified with the help of local volunteers, who extended the limited system of rail trails and marked routes with their knowledge of the best bike routes on existing roads. Of all the possible routes, the emphasis was placed on those which offered a combination of natural and cultural landscape experience, scenic value, and logical destination points.

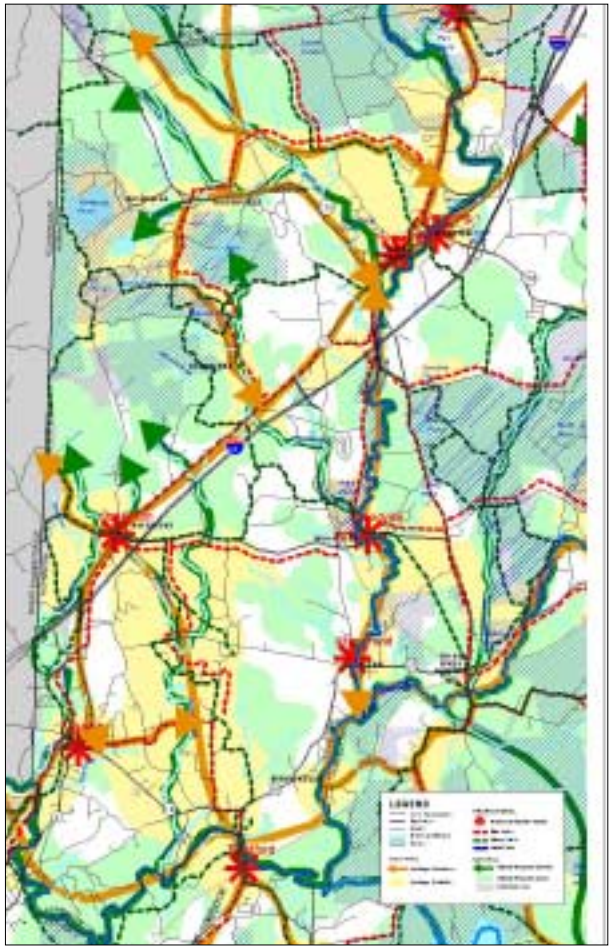
The final kinds of trail identified in the study were **water trails**. Like bike routes, these exist, in theory, wherever there is navigable water. As a practical matter, turning these into useable trails that connect places people want to go requires a large amount of planning and field



The recreational resource priorities establishes goals for a future network of trails for hiking (green), biking (red) and boating (blue). Key destination points link the system together into a cohesive system.



The final step in the Greenspace planning process is to overlay the separate resource maps to identify areas rich in both natural and cultural resources (dark green). These are often the most important to protecting the unique character of the community.



By adding recreational priorites and land that is already protected (cross hatching), planners can identify opportunities to preserve multiple resources while providing sites for public recreational access, historic interpretation, nature trails, and so on.

work. This was ably supplied by the Wood-Pawcatuck Watershed Association, which prepared a detailed inventory of existing and potential access points for the majority of the Pawcatuck Watershed. Other access points were identified from RIGIS coverages of boat launches and marinas, and volunteers in each community helped in planning potential boating routes along the coast, through the salt ponds, and in some of the shorter river systems. Lastly, **destination points** were identified, both to locate fixed recreation sites like parks, playgrounds and schools, and to evaluate the potential of the various trail systems in developing a network connecting important points around the county. These points were divided into primary destinations, such as village and town centers, regional transit hubs, and the University of Rhode Island, and secondary destinations, such as parks, playgrounds, conservation areas, and schools.